

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (original): Fibre-reinforced pressurizable structure  
2 comprising a gas-or fluid-tight body overwound as an  
3 isotensoide with a number of fibre filaments, whereby the  
4 radius of the body varies with respect to a  
5 rotation-symmetrical axis of the structure, such that said  
6 body comprises a number of concave surface sections spaced  
7 apart from the axial ends, each having a local minimum  
8 radius, and a number of convex surface sections spaced apart  
9 from the axial ends, each having a local maximum radius,  
10 characterized in that at least one concave surface section  
11 is overwound with a fibre such that the longitudinal  
12 orientation of the fibre along a finite length thereof is  
13 orientated substantially perpendicular with respect to the  
14 rotation- symmetrical axis of the structure.

1 Claim 2 (original): Fibre-reinforced pressurizable structure  
2 according to claim 1, characterized in that the fluid-tight  
3 body is quasi-geodesically overwound in a continuous  
4 fashion.

1 Claim 3 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the finite length of the fibre comprises a locus at  
4 which the fibre undergoes torsion with respect to its  
5 longitudinal centre-line.

1 Claim 4 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the finite length of the fibre comprises a locus at  
4 which there is reversal of the side of the fibre which is in  
5 contact with the body.

1 Claim 5 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, whereby a  
3 parameter called the q-factor is defined as the square of  
4 the dimensionless quotient of said local maximum radius of a  
5 convex surface section adjacent to the concave surface  
6 section in question and the local minimum radius of the  
7 concave surface section in question, and whereby a  
8 dimensionless parameter called the r-factor is defined as  
9 the quotient of the total distribution of the external axial  
10 load on the circumference of said local minimum radius and  
11 the internal axial force generated by the internal pressure  
12 on the surface of the axial section at said local maximum  
13 radius, characterized in that when the q-factor and the  
14 r-factor of the body have values in the ranges of  $q = \{1, 8\}$   
15 and  $r = \{-1/q, -1/(2q)\}$ , or  $q = \{8, \infty\}$  and  $r = \{0, -1/q\}$ ,  
16 there is reversal of the side of the fibre which is in  
17 contact with the concave surface section.

1 Claim 6 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, whereby a  
3 parameter called the q-factor is defined as the square of  
4 the dimensionless quotient of said local maximum radius of a  
5 convex surface section adjacent to the concave surface  
6 section in question and the local minimum radius of the  
7 concave surface section in question, and whereby a  
8 dimensionless parameter called the r-factor is defined as

9 the quotient of the total distribution of the external axial  
10 load on the circumference of said local minimum radius and  
11 the internal axial force generated by the internal pressure  
12 on the surface of the axial section at said local maximum  
13 radius, characterized in that when the q-factor and the  
14 r-factor of the body have values in the ranges of  $q = \{1,12\}$   
15 and  $r = \{-1/q,0\}$ , the fibre is in contact with the concave  
16 surface section in question with its one and same side  
17 throughout.

1 Claim 7 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the body is flexible, i.e. non-rigid, and that the  
4 fibres are supported by a matrix material.

1 Claim 8 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the axial length of at least one axial section of  
4 the structure is variable with respect to the longitudinal  
5 axis of the pressurizable structure.

1 Claim 9 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that at least one axial section of the structure is  
4 pivotable with respect to the longitudinal axis of the  
5 pressurizable structure.

1 Claim 10 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that at least one axial section of the structure is  
4 pivotable with respect to an axis, which axis is orthogonal

5 with respect to the longitudinal axis of the pressurizable  
6 structure.

1 Claim 11 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 8, characterized  
3 in that at least one axial section of the structure  
4 comprises a combination of at least two of the technical  
5 elements of said claims, e.g. in that at least one axial  
6 section of the structure is pivotable with respect to the  
7 longitudinal axis of the pressurizable structure and that  
8 the axial length of this axial section of the structure is  
9 variable with respect to the longitudinal axis of the  
10 pressurizable structure as in the case in which the  
11 pressurizable structure comprises a substantially  
12 hyperboloid shape.

1 Claim 12 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the pressurizable structure comprises a one-to three  
4 dimensional arrangement of a number of pressurizable fuel  
5 tanks or pipelines.

1 Claim 13 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the pressurizable structure comprises a spring means  
4 for a load-displacement function, preferably an adjustable  
5 load-displacement function.

1 Claim 14 (previously presented): Fibre-reinforced  
2 pressurizable structure according to claim 1, characterized  
3 in that the pressurizable structure comprises means for an

actuating function, such as for elevators, excavators and industrial robots.

Claim 15 (previously presented): Fibre-reinforced pressurizable structure according to claim 1, characterized in that the pressurizable structure comprises means for a shoring or strutting function, such as construction beams.

Claim 16 (original): Fibre-reinforced pressurizable structure according to claim 15, characterized in that the means for a shoring or strutting function, such as construction beams, are adaptable to the Eigen-frequencies of the pressurizable structure.

Claim 17 (new): Method of producing a pressurizable structure, comprising providing a gas- or fluidtight body, wherein the radius of the body varies with respect to a rotational-symmetrical axis of the body, such that said body comprises a number of concave surface sections spaced apart from the axial ends, each having a local minimum radius, and a number of convex surface sections spaced apart from the axial ends, each having a local maximum radius, further comprising overwinding the body with a fibre filament, characterized in that the method further comprises overwinding at least one concave surface section continuously as an isotensoide.

Claim 18 (new): Method according to claim 17, wherein overwinding the body comprises spiralling or braiding the body with a number of fibre filaments.

1 Claim 19 (new): Production apparatus for producing a  
2 pressurizable structure, comprising a support element for  
3 supporting a gas- or fluidtight body, wherein the radius of  
4 the body varies with respect to a rotational-symmetrical  
5 axis of the body, such that said body comprises a number of  
6 concave surface sections spaced apart from the axial ends,  
7 each having a local minimum radius, and a number of convex  
8 surface sections spaced apart from the axial ends, each  
9 having a local maximum radius, further comprising a ring  
10 surrounding the body, wherein the rotational- symmetric axis  
11 of the ring substantially coincides with the  
12 rotational-symmetrical axis of the body and wherein the ring  
13 is movable rotational and/or translational with respect to  
14 its axis, the ring being provided with fibre filament  
15 guiding elements, characterized in that the production  
16 apparatus is arranged for overwinding at least one concave  
17 surface section continuously as an isotensoide.

1 Claim 20 (new): Production apparatus according to claim 19,  
2 being arranged to exert a torsion on a fibre filament with  
3 respect to its longitudinal centre-line overwinding the at  
4 least one concave surface section.

1 Claim 21 (new): Production apparatus according to claim 19,  
2 being arranged to twist a fibre filament overwinding the at  
3 least one concave surface section.

1 Claim 22 (new): Production apparatus according to claim 20,  
2 being arranged to twist a fibre filament overwinding the at  
3 least one concave surface section